

The Republic of Sudan
Ministry of Culture and Information
National Corporation for Antiquities and Museums (NCAM)

Report to UNESCO
State of Conservation Report
The property of Archaeological Sites of the Island of Meroe

Property: Archaeological Sites of the Island of Meroe

State Party: Sudan

World Heritage ID: 1336

Date of Inscription: 2011

Criteria: (ii) (iii) (iv) (v)

Reported by:

Dr. Mahmoud Suliman Bashir

Resident Manager of the Island of Meroe World Heritage Site

31 January 2025

Introduction:

At its 46th session in New Delhi in July 2023, the committee approved decisions regarding the property and requested the State Party to submit an updated report on the state of conservation of the property, along with the implementation of its recommendations, by 1 February 2025 for review at the 47th session of the World Heritage Committee. This report provides an updated assessment of the current state of conservation of the archaeological sites within the World Heritage Property of the Island of Meroe.

Comments on World Heritage Committee Decisions:***Support from the International Community;***

The committee called on the international community to support the State Party in its efforts to protect the property. However, it is important to note that the property has not received any direct support to date. While the *Urgent Safeguarding Measures for Sudanese Cultural Heritage* project funded by UNESCO's Heritage Emergency Fund was acknowledged and allocated exclusively for a community workshop at Meroe and the preparation of a risk and damage assessment report for the Island of Meroe World Heritage Sites. No funds have been directed to address the on-site challenges facing the monuments or their preservation, as outlined in our February 2024 report. Consequently, the situation described in the previous report remains unchanged. Furthermore, the site endured a second severe rainy season between July and September 2024, exacerbating the challenges. (Please refer to the attached risk and damage assessment reports for further details.)

Tarabeel Museum

Regarding the unfinished museum building at the Meroe Pyramids site (Tarabeel Museum), the committee's decision warrants clarification. Our proposal was made in light of the severe impact of the ongoing war on museums across Sudan. However, the suggestion to consider the Tarabeel Museum's location and completion was intended for the post-conflict recovery phase. It was not meant to be a priority for current emergency safeguarding measures. Moreover, any decision about the museum's relocation or construction will require further consultation with the World Heritage Centre and Advisory Bodies. At present, this matter remains secondary to the urgent safeguarding measures necessary to preserve the property's Outstanding Universal Value (OUV) under the challenging circumstances.

Protection of the Buffer Zone

The protection of the buffer zone at Meroe has emerged as one of the most pressing challenges in managing the site, including the pyramids and the royal city. Increasing pressure from the local community to allocate land for settlement within the buffer zone poses a direct threat to the site's boundaries and its cultural integrity.

A misunderstanding arose from our earlier proposal for boundary modification, as the issue was not fully articulated. This situation must be contextualized within the ongoing Sudanese conflict, which has triggered significant migration of internally displaced people from conflict zones to Meroe. The resulting uncontrolled urban and agricultural expansion exacerbates the challenges to the buffer zone's protection.

We recommend addressing this issue as a critical impact of the war on cultural heritage. Urgent support from the World Heritage Centre and Advisory Bodies is essential to develop and implement effective measures to mitigate these pressures and safeguard the site.

We have recently received a letter from the Steering and Services Committee of Begarawiyah North Village representing the local community around Meroe (see below), request the approval of the expansion of the residential area to accommodate the growing population in Begarawiyah North. The proposed location of the residential area is located to the south of the Western necropolises, on the edge of the southern boundary of the site. The southern boundary of the buffer zone is 1.4 km far from the site fence of the western cemetery.

The committee guarantee that the archaeological sites will be preserved and they have no objection to incorporating any building that may hinder an archaeological site into their residential planning. Here, they mean that all random buildings belong to nomads which are scattering along the site buffer zone could be dismantled and incorporated in the proposed residential area.

In this matter we need assistance from the World Heritage Centre and Advisory Bodies to answer the local community request.

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ
ولاية نهر النيل

مجلسية شندى - وحدة كبح شدة إدارية
لجنة التسيير والخدمات بقرية البراري شمال

التاريخ: ٢٥/١١/٢٠٢٤

الموضوع: زيادة مساهمة إيجارية شمال بكية

السيد / دا محمد / السيد محمد / السيد / المحترم
مدير المكتب الإقليمي للشؤون بولاية نهر النيل

بعد التحيّة والاحترام
بالإشارة للموضوع أعلاه تميطكم علماً أنّ من لجنة التسيير والخدمات
بقرية البراري شمال ولاية نهر النيل لقيتم المتابعة بالحدود الأثرية
والمواقع الطبيعية كالأودية والخيرات وزيادة الكثافة الكائنة من
الواقعات .

قد يومر سيادتكم المتوقرة زيادة المساهمة الكائنة بما يتناسب
مع زيادة النسبة الكائنة بالبراري شمال ولاية نهر النيل من ذلك
المحافظة على المواقع الأثرية ولما نحن لدينا من أرقام أي حيتى
يعيق موقع أثرى من قطفنا الإسكائية .

وكلنا أمل من تحقيق ذلك المسعى لأننا نساهم المنطقة
هو المجلس الأعلى للشؤون كالتالي



لكم منير شكر والتقدير
القديمة

عبد الرحمن عبد الكريم محمد أحمد
مدير لجنة التسيير والخدمات
بقرية البراري شمال

Letter from the Steering and Services Committee

In the Name of Allah, the Most Gracious, the Most Merciful

River Nile State

Shendi Locality - Kabushiya Administrative Unit

Begarawiyah North Village Steering and Services Committee

Date: 2024/12/25

Subject: Expansion of the Residential Area in Begarawiyah North

Dr. Mahmoud Suliman Mohamed Bashir,

Director of the Regional Office for Antiquities in the River Nile State,

Greetings and respect

With reference to the subject above, we would like to inform you, as the Steering and Services Committee of Begarawiyah North Village, that due to the limited area caused by the boundaries of the archaeological sites, natural features such as valleys and streams, and the increasing population density from incoming residents, we request your esteemed office to approve the expansion of the residential area to accommodate the growing population in Begarawiyah North.

We will ensure that the archaeological sites are preserved and have no objection to incorporating any building that may hinder an archaeological site into our residential planning.

We are hopeful that this endeavor will be realized, as the people of the area are the faithful guardians of the ancient Meroitic Kingdom's heritage.

Thank you for your attention.

Abdul Rahman Abdul Karim Mohamed Al-Hassan

Chairman, Steering and Services Committee

Begarawiyah North Village

Translation of the letter from the Steering and Services Committee



The proposed expansion of the residential area

Meroe Pyramids Site State of Conservation



The Royal Cemeteries of Meroe are among the most prominent and famous remains of the Meroitic period in Sudan. Three large groups of pyramids can be found to the east of Meroe City, the former capital of the Meroitic Kingdom. All in all, more than 1000 graves, among them approximately 140 pyramidal superstructures, are situated in the so-called Northern, Southern and Western Necropolis. They include the burials of Meroitic kings, queens, and princesses, members of royal families, high-ranking officials and individuals.

The impressive tombs of the Kingdom of Meroe consist of burial chambers cut into the bedrock, a staircase leading down towards them, and a superstructure above. Whereas sand covers all the underground features, the superstructures are the pyramids with small chapels on the east side dominate and have always dominated the cemetery fields. The chapels are resembling a small Meroitic temple. It consisted of a single room; its entrance is marked by means of a small pylon. The Meroitic pyramids are rather small and steep. Their inclinations vary slightly at *c.*70°. They measured up to 30 m high.

The pyramids of Meroe is one of Sudan's most important archaeological sites. Its remarkable pyramids attract thousands of Sudanese and international tourists each year. Situated in an almost unspoiled landscape, the site have been included in the UNESCO World Heritage List since 2011; based on its outstanding universal value (OUV).

The pyramids at Meroe and their well-preserved relief decoration were adversely affected by various threats such as natural deterioration, structural problems, and destruction for building materials, treasure hunting and early 20th century large-scale excavations. However, nowadays, destruction by sand abrasion and damage by visitors are the most severe threats.

The accumulation of sand dunes in the area of the royal cemeteries at Meroe is one of the main problems at the site. In fact, sand accumulation has started in the 1960s only and causes enormous abrasion of the original ancient surfaces. Yet the sand itself is not the main problem. The sand in combination with the wind causes major destruction. The windblown sand leads to enormous erosion at the original surfaces of the ancient monuments. It is a mechanical action whereby each grain of sand abrades the construction, resulting in a loss of original material – resembling the process of sandblasting. Making things even worse, the accumulation of sand at the pyramid fields is not comparable to a steadily progressing burial of the monuments, which would provide a certain protection. Rather, the dunes move through the cemeteries filling, for instance, parts of a chapel in

autumn and exposing it again in spring, depending on the wind direction and air turbulence. As this process recurs every year abrasion becomes a serious problem as to the conservation of this extraordinary heritage.

Currently the most obvious destruction can be observed with the sandstone blocks of the chapels and with the corners of the pyramids. Especially the reliefs are exposed to the harsh conditions and endangered. The rate of destruction as to the chapel reliefs is alarming.

Currently, the main threat to the pyramids is the accumulation of sand, which remained the greatest threat to the site. This has been evident after the last rain season in September 2023, when the region of Meroe received the highest record of rain and flash floods. In fact, this situation is continuing at the moment since we are in the middle of the rain season of 2024, and the area is recording high rain records. Sand surrounding chapels kept humidity and rain water penetrate through chapels walls from outside to inside chapels where walls are decorated with inscriptions and unique depictions. We have noticed this threat for example in pyramid Beg. N.12. Sand is accumulated on the northern wall of its chapel, and on the same wall from inside we found the sand stone blocks are wet, and there is presence of salt in whitish colour covers the wall, and also in crystals form coming out of these blocks. This is the first time to observe such a phenomenon at Meroe pyramids.



Sand accumulation and the erosion of corners

In addition, rain water is normally stuck around pyramids located in the lower part of the cemetery, and stay for long period, which affect the monument with the increase of humidity. The main reason of this is the sand dunes and also because there is no drainage system can allow water to pass these pyramids. This is one of the risks that need urgent treatment, because its impact on the pyramids is very clear as we noticed some new cracks in Beg. N 19.



Rain water around pyramid Beg. N 19

The pyramids site at Meroe now witness uncontrolled visits that negatively affect its monuments. Indirect consequences of the current conflict in Sudan since 15 April 2023 can be seen in the almost collapse of site monitoring and maintenance project at Meroe pyramids. Also, the massive displacement of the citizens of Khartoum and its negative impact is obvious in the increase of uncontrolled visits to the monumental sites, extensive building of houses in the buffer zone of the property. This is happening without adequate control due to the lack of staffs.

The site is nowadays a destination for visitors from surrounding villages that have been overpopulated by displacement from Khartoum state. The negative impact is evident in the increase of visitor's writings on the walls of the pyramids and the negative behaviour of climbing on the pyramids, which results collapse of stone blocks.



Visitor's writings on the walls of the pyramids

The impact of global climate change on the site is evident through the increase of the rain records in the area during the past years. This is together with the accumulation of sand. This combination of sand and rain remained the greatest threat to the site. This has been evident after the last rain season in September 2023, when the region of Meroe received the highest record of rain and flash floods. Sand surrounding chapels kept humidity and rain water penetrate through chapels walls from outside to inside chapels where walls are decorated with inscriptions and unique depictions. We have noticed this threat for example in pyramid Beg. N.12. Sand is accumulated on the northern wall of its chapel, and on the same wall from inside we found the sand stone blocks are wet, and there is presence of salt in whitish colour covers the wall, and also in crystals form coming out of these blocks. This is the first time to observe such a phenomenon at Meroe pyramids.



Humidity and rain water and the presence of salt

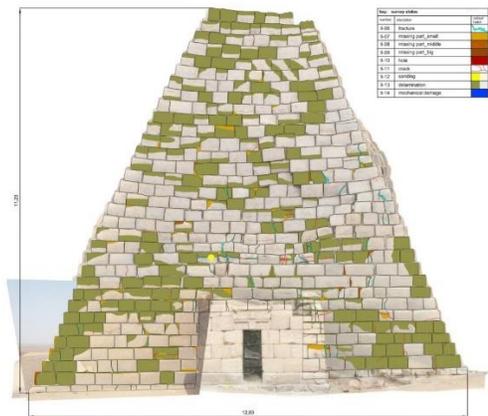
The impact of the last rain could be seen also in all the pyramid blocks in the whitish colour appeared in most of the sand stone blocks of the structure of the pyramids, which is also presence of salt resulted from rain water stuck on top of the pyramids for long time. This feature is also been recorded for the first time.



Presence of salt

The main construction material for all superstructures was local sandstone. Burned brick and rubble stones were used too. As to the pyramids a rubble core was cladded with sandstone or brick masonry. The remains of coloured lime plaster confirm that the entire structure was once plastered and painted. Black-brown, red and yellow colours have been found.

All pyramids at Meroe are highly affected by ancient looting that cause loosing of the top parts of the pyramids. This problem allow rain water to penetrate through the pyramid structure and weakened the sand stone blocks and the rubble core, which results partially collapse in number of pyramids like Beg. S 10 and distortion on the structure such as pyramid Beg. N 9.



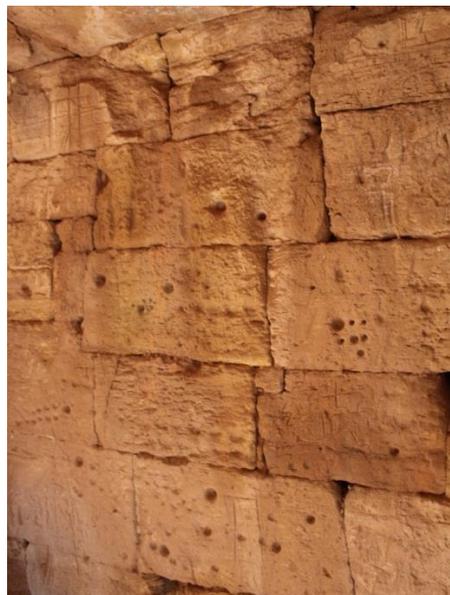
Partially collapse in Beg. S 10 and distortion in pyramid Beg. N 9

The sand stone of the pyramids at Meroe is soft and delicate kind of stone. Therefore, signs of degradation caused by natural impact can easily be traced. Sand erosion is the major problem and

it cannot be solved by conservation only. Small animals and insects are also causing problems by living in these stones and digging small holes.



Sand erosion 1985 left and 2015 right



Holes in the wall made by small insects

Since 2016, QMPS has conducted, developed and tested various conservation measures. One tomb was chosen as a prototype to develop suitable restoration methods addressing damage by sand

erosion, the consolidation of the pyramid masonry and filling as well as the structural failure of pyramid chapels. Furthermore, the restoration of relief walls inside of chapels was begun and in 2018, the project resumed and partially finished previous reconstruction work of F. Hinkel. A conservation concept was compiled incorporating the results of all ongoing sub-projects.

All parts of the site which witness conservation work during the years of the project are in good condition, but the unfinished conservation work at the reopened burial chambers has become one of the threats, because for example in Pyramid Beg. N. 9 the metal props used for security measures are corroded as a result of humidity and rain water penetration.



Unfinished conservation work

Also the rescuing of some well-preserved chapel reliefs by applying tissue paper (so-called ‘Japan paper’) and protecting them by a brick wall it didn’t survive after the heavy rain of last year. It was kind of temporary treatment need to be followed by actual conservation work, but because of the postponement of the projects this is not happening. So, some conservation work is dramatically converted to real threat to the monuments.



Protection by a brick wall

Considering current circumstances in Sudan, the current preservation condition at Meroe Pyramids is very risky and a clear problem facing managing the site. It is important to note that all the previous management programs and activities were funded by QMPS. Then at the end or the postponement of the QSAP project all these achievements has been converted to problems and the site faced by real challenges. In fact, running and maintenance of what has been made by QMPS become one of the main problems to be addressed.

Concerning the site current condition there is a need for urgent conservation work following the conservation concept developed by QMPS. This work should concentrate at least on finishing work at Beg. N 9, Beg. N 12 and Beg. N 13.

The pyramids site at Meroe is located in a harsh area highly affected by environmental factors such as sand accumulation accompanied by strong wind. This fact put the site monuments in a direct risk. Also, the recent factors of climate changes put its shade on the site, since rain has registered high records during the last years. However, since the site monuments are consisted of sand stone then all these factors could affect the preservation of the site and can cause serious damage to the monuments. Therefore, the site is not able to survive under current circumstances. So, in order to give the site the ability to adapt and recover from adverse conditions and potential risks, we should continue the monitoring and maintenance program, which allow direct monitoring and contentious maintenance. Now managing the site lack the presence of permanent staff and clear financials resource to cover the running cost of the infrastructures and site supervision. Considering current circumstances in Sudan, the current preservation condition at Meroe Pyramids is very risky and a clear problem facing the preservation of the site.

We considered sand accumulation as the main threat to the site. Quoting from George Okello Abungu; Assessment of Impact of 2020 floods on World Heritage and Archaeological Sites in Sudan - Mission Report 2020; (The site of the Royal burial at Begarawiyah (Meroe) is large but well kept. The major threat to this site is not from floods as it is built on a raised ground but from the sand dunes that is not only covering pyramids, their entrances but also due to high winds and sand circulation has and continue erase substantial drawings, etchings and paintings that tell the story of the place and that form part of its authenticity and integrity. This is more so because these features are etched on the sandstone that in itself is porous and with age, wind and sand erosion continue to deteriorate. The short-term recommendation to address on this site is to physically remove the sand that is covering many of the pyramids and especially their entrances and entrance chambers and erasing the features and writings that are part of the heritage's authenticity and integrity). In addition, with the currently increase of the rain in the area, the site monuments are in direct and comprehensive risk.

The potential impact of identified risks can be seen in the sand surrounding chapels that kept humidity and rain water penetrate through chapels walls from outside to inside chapels. However, it is important to note that, the walls of the pyramid chapels were often decorated with striking reliefs. On the inner walls the majority here of illustrate funerary scenes. On the outside the remaining pylons are often adorned with relief decorations, showing for instance motifs of the king and queen defeating their enemies. Additional graffiti can be found all over the chapel as well as the pyramid walls dating from ancient Meroitic times to early and contemporary visitors.



Decorated chapel

The main priority in facing current and potential threats at the site is protection. This is including protection from sand erosion and from uncontrolled visitors. All mitigation efforts should concentrate on these matters. There is a need for a large scale sand removal from the surroundings of Meroe pyramids funerary chapels. Also fencing the core zone of the property is one way to control visitors of the site in order to reduce negative impact and attitude.

The Qatari Mission for the Pyramids of Sudan (QMPS) started from the beginning of the project with preventive and protective conservation measures as well as undertook maintenance and monitoring tasks. Now and after the postponement of the project the site is lacking these activities. Therefore, all preventive measures at the site are aimed to continue with the previous mitigation plans developed by QMPS, such as:

- 1) Cleaning the areas around the monuments from sand dunes; repair and improvement of wind deflection walls.
- 2) Repair of broken chapel doors to protect the inner chapel reliefs.
- 3) Partially heightening of low preserved chapel walls and covering chapels with sand and gravel to protect their reliefs.
- 4) Rescuing some well-preserved chapel reliefs by applying tissue paper (so-called 'Japan paper') and protecting them by a brick wall.
- 5) Assessing well-preserved chapel remains for future conservation or reconstruction projects.
- 6) Protection of the pyramids from sand erosion – planting of vegetation belts:-

The accumulation of sand dunes in the area of the royal cemeteries at Meroe started in the 1960s only and causes enormous abrasion of the original ancient surfaces. To stop this threat to the monuments, QMPS investigated the situation, analyzed the reason for the sand accumulation and started first counter measures.

The comprehensive research of Neil Munro identified the sources of the sand, the amount entering the cemeteries, the wind speed and direction. He developed a scheme for green belts in the wadis North and South of the pyramids, the necessary location for the belts and the species to be planted. Two wells were already dug to irrigate the green belts.

Under current condition and with the limited presence of staff at the pyramids site at Meroe, there is a need for the reestablishment of the site management committee. This will facilitate initiation of emergency contacts that can provide service to the site and participate in the protection of the site and its development.

The Conservation Strategies are based on the concept and plans developed by QMPS, since 2019, which are started identification and assessment of current situation at the pyramids site:

- Structural problems at pyramids.
- Increasing loss of original surfaces due to sand erosion.
- Repair, finish and improvement of previous conservation work.
- Catalogue of damages and exemplary mapping and analyzing of damages.

Urgent measures

- 1- Urgent sand removal from around the pyramids at Meroe Royal Cemetery.
- 2- Urgent conservation for the pyramids funerary chapels at Beg. N12, Beg. N 13, Beg. N 11, and Beg. N 18.
- 3- Urgent conservation for the burial chambers at pyramids Beg. N 9.
- 4- Urgent site protection.

Future requirements

- Continuation of the conservation work at the site based on the conservation concept and plans developed by the Qatari Mission for the Pyramids of Sudan QMPS.
- The long-term recommendation is the implementation of planting trees to create a barrier especially on the route of the wind that brings in the sand. The study to establish wind and sand movement is already prepared. With the climate change phenomenon other studies in relation to this may also be required. Research on climate change is particularly important having in mind the reported wind changes and accumulation of sand that has taken place here in recent human memory.
- Establishment of a site management plan and initiation of the management committee.

Estimated fund required

- Budget for urgent sand removal from around the pyramids at Meroe Royal Cemetery:

	Description	Duration	Amount in USD
1	Rent of one car (4 x 4) for Transportation	60 days	4,200 USD
2	Digging tools and equipment	-	1500 USD
3	2 Archaeologists	2 × 50 USD ×60 days	6,000 USD

4	2 Conservators	2 × 50 USD × 60 days	6,000 USD
5	Accommodation	60 Days	1500 USD
6	Fuel for cars and generators at the camp and the wells for water supply		3000 USD
7	Local workmen	10 × 10USD × 50 days	5,000 USD
8	Rent of a truck and a loader	100 load	5,000 USD
	Total		32,200 USD

- Budget for urgent conservation for the pyramids funerary chapels at Beg. N12, Beg. N 13, Beg. N 11, and Beg. N 18.

	Description	Duration	Amount in USD
1	Rent of one car (4 x 4) for Transportation	30 days	2,100 USD
2	Conservation materials	-	2000 USD
3	2 Archaeologists	2 × 50 USD × 30 days	3,000 USD
4	2 Conservators	2 × 50 USD × 30 days	3,000 USD
5	Accommodation	30 Days	700 USD
6	Fuel for cars and generators at the camp and the wells for water supply		1,500 USD
7	Local workmen	6 × 10USD × 20 days	1,200 USD
	Total		13,500 USD

- Budget for urgent conservation for the burial chambers at pyramids Beg. N 9.

	Description	Duration	Amount in USD
1	Rent of one car (4 x 4) for Transportation	20 days	1,400 USD
2	Conservation materials	-	2000 USD
3	2 Archaeologists	2 × 50 USD × 20 days	2,000 USD
4	2 Conservators	2 × 50 USD × 20 days	2,000 USD

5	Fuel for cars and generators at the camp and the wells for water supply		1,500 USD
6	Technicians	4 × 30USD × 20 days	2,400 USD
7	Accommodation	20 Days	500 USD
	Total		11,800 USD

-Budget for metal fence for the Northern Cemetery.

Description	QTY M	Total Cost USD
Fence & Razor wire Galvanized wire mesh + top V" shape + razor wire, Wire thickness = 3 mm, Roller height = 2 m , Roller length = 10 m, Post type = Circul Post, Dia = 50, Wall thickness =1.5mm	5420 m	142.817
Base Materials (Cement + Aggregate + Sand + Water) costs	5420 m	27.100
Workmanship Survey Works + Excavation + Concrete Pouring + Fence Installation	5420 m	138.210
Total		308.127 USD



Currently, the site is suffering from the absence of Stakeholder's involvement and the complete isolation from supervision of both federal government and the state government. Also, regarding involvement of archaeologist is one of the task should be considered, since there is no mission working and responsible of the site, since the postponement of the Qatari Mission for the Pyramids of Sudan in 2019. Therefore, all work have been done during the last years and the ongoing conservation and protection work at the site is conducted by NCAM and its resident team at Meroe.

Meroe Royal City Site State of Conservation



The Royal City of Meroe

The Royal City is the name given to the area within the enclosure wall which contains the so-called Roman Bath and the remains of many structures of a palatial nature. The Royal city of Meroe is an expansive site that is by all means quite significant. It comprises of a complex of activity areas within and outside the city walls with the most dominant feature being the large Amun Temple. The Temple of Amun was erected on the east side of the Royal City. This was the second largest of the Amun temples in the kingdom and was presumably designed to replace the earlier temple of the god at Meroe which had stood in the Royal City.

The other features dotting the landscape include temples and palaces and it is known for its iron smelting some of the outstanding features of this city are large mounds of slags that are a living demonstration of this once important activity in this city and kingdom.

The city of Meroe – once described as one of the largest archaeological sites in Africa –still holds many “mysteries” as only a small part of the site has been excavated. The city has an impressive enclosure wall of stone blocks, and five gates leading into the enclosed area. Temples and palaces are scattered within and out of the enclosed area. All these features are not visible to visitors and

difficult to be understood without having a good guide. In away the description of visiting the site can at least be described as unfortunately chaotic (quoting Prof. George Okello Abungu, 2020).

Natural elements such as rain have impacted the site conservation condition at Meroe Royal City. The last rain season was considered the heaviest during decades. The result of rain could be seen in the growing of vegetation all over the site and its monuments. Temples and palaces walls are now covered with trees, which considered clear threats to the monuments.

The absence of a drainage system at Meroe Royal City is one of the major problems, which cost direct threats to the monuments and result growing of uncontrolled trees. That can be seen in Amun temple and in other buildings. Also during our recent inspection we have noticed newly broken stone, it is one of alters at the sanctuary of Amun temple.





Uncontrolled vegetation

Nile flood is one of the contentious risk to the site. The flood of the Nile in 2020 reached record level and caused dramatic threats to some of the ancient buildings at Meroe Royal City. To stop strongly the threat, a dyke was built on the western side of the royal city to prevent any incursion of the Nile. The protection operations conducted at the site aimed to prevent the water to enter inside the archaeological area.



Nile Flood in 2020

Meroe lies in the savannah belt on the south side of the Sahara in an area which today receives approximately 100mm of rainfall annually. However, it is its proximity to the Nile which makes

the region viable for sedentary human activity, and this seems to have been the case throughout the city's history.

At the royal city of Meroe, the Amun Temple in particular is in a very poor state and requires immediate attention in terms of consolidation, presentation and visitor management. The Amun temple is exposed to the greatest traffic from visitors. The site is nowadays a destination for uncontrolled visitors from surrounding villages that have been overpopulated after the war by displacement from Khartoum state and yet there is completely no interpretation or presentation of the heritage and how to go around it. The result is that people just move all over including on delicate walls, and this is the greatest threat to the monuments. Due to the trotting of both humans and domestic animals on the site, and the mass continuous excavations the state of conservation is precarious with walls chipping off and loose grounds and archaeological material washing away.



Newly broken stone blocks and the alter at Amun Temple

In addition, and after the recent visit to evaluate the indirect impacts of Sudan war on the site we noticed that, the earthen dyke made to protect the site from the Nile flood is in poor condition, and it will not protect the site properly. The dyke is broken in many parts because of the movement of animals passing over it, and also because of a negative attitude of locals by making use of the materials we used for the dyke, such as bags and building materials for their own needs.

Same as the pyramids site impact of global climate change on the site is evident through the increase of the rain records in the area during the past years. Rain impact is not only through direct rain water, but also through flash floods coming from wadies towards the river. Rain water supports growing of vegetation in uncontrolled way, which affect the site monuments in a negative way.



The earthen dyke protecting the site from flash floods

All the structures at the royal city of Meroe are in poor condition. Temples and palaces are exposed to threats by both natural and human factors. The site has never experience conservation work, a part from the royal bath which is protected and witnessed maintenance work by the German Mission.

Sand stone, firebricks, and mudbricks are the materials used in constructing all buildings at the site. All these materials are considered soft and need intensive care to survive. Therefore signs of

degradation is clear and the impact of erosion and destruction can be seen all over the site with no exception.



Construction materials condition

The site of the royal city and its monument are missing all kinds of conservation work. The site important is overwhelming, but it is unfortunate to say that all the site need urgent attention. The Royal City of Meroe need an argent efforts regarding cleaning, protection, and presentation.

Generally, the Royal City of Meroe need an argent efforts regarding cleaning, protection, and presentation, the site important is overwhelming and valuable stone blocks with inscriptions even some with Meroitic language are still scattered at the site and it can easily be destroyed or disappear.

The identified risks at Meroe Royal City site could be summarized in rain water, random growing of vegetation, uncontrolled visitors and their negative attitude, and that together with the absence of any previous conservation and management work. Therefore, potential impact of the identified risks is alarming. In fact, monitoring the site and its state of preservation shows clear gradually deterioration in the site monuments.

Meroe Royal City is exceptional site, because of the contradictory between its importance and its poor condition. All the building at the site are facing the similar threats, and all identified risks are connected. So, it is difficult to prioritize the site threats, therefore, we are considering all the site monuments priority and mitigation efforts should focus on.

Preventive Measures

Amun Temple (M 260):

Looking at the site of the royal city current condition, it is difficult to appreciate the site's magnificence unless one is an archaeologist. There is a complete agreement between the experts on the recommendation to close the site in general and the Amun Temple area in particular. One of the preventive measures has been done is the closing of the site to visitors and scholarly work. Therefore, under current circumstances, and following the 2019 joint World Heritage Centre ICOMOS advisory mission, and UNESCO mission for the Assessment of Impact of 2020 floods on World Heritage and Archaeological sites in Sudan recommendation, we are proposing the backfilling of Amu Temple at Meroe Royal City in order to protect the site for future generations.

Augustus Temple (M 292):

This building is attracts particular attention because some parts of it are still standing. Also because of its historical importance as constructed to the god of victory, and the head of the Roman emperor Augustus was buried there. Current condition of this building is alarming and we witnessed recent collapse of some stones of the building, and clear damages in the standing walls and columns of the temple. Therefore, urgent comprehensive work combining excavations and conservation work in highly recommended.



Royal City:

In order to address current threats at the site of the royal city, cleaning of the newly grown vegetation is highly recommended. This will allow protection of the sand stone blocks of the monuments and prevent humidity caused by trees, and rain water stuck around these trees.

There is urgent need to carry out a cleaning and clearing exercise of the site in terms of reordering the presentation, dealing with excavated dump and site interpretation and presentation. Conducting

rehabilitation work at the site is recommended and proper way of interpretation and accessing to be put in place to all buildings.

Also, there is a need for creating awareness among the local community to avoid taking their animals on the site that trample on the walls and other heritage features and in the process causing breakages. This matter could only be handled through community engagements and we have to provide more opportunities to the local community to be part in the management of the site.

The Royal City of Meroe is one of the most unlucky sites even it is one of the most important sites in Sudan. The site lack any kind of conservation. All what has been done at the site was through various missions carrying out research with their own various interests that conservation is not among them. Through these missions the site has to some extent been conserved, received investments and treat challenges facing the site. The long-term survival and sustainable conservation however cannot be based on outside assistance and goodwill alone. Therefore, it is highly recommended that a Master Plan be developed for the site for all that will guide conservation, research, interpretation and presentation.

Urgent measures

The Royal City of Meroe needs urgent work which I consider a rescue work. More protection to the site is urgently needed. The proposed work will incorporate both research work and fieldwork. There is a need to conduct survey and mapping different monument and its state of preservation, recording scattered loose blocks with inscriptions, surface cleaning, fencing, and develop new site entrance and select areas for a better presentation of the site.

Development of conservation concept and conservation plans based on mapping damages in each monuments at the royal city.

In the near future the site need to be handled in different way that consider its conservation the main priority. Here, NCAM should give more attention to the site and play crucial role in rearranging the policy work of the mission working at this site.

Estimated fund required

1. Budget for backfilling Amun Temple at Meroe Royal City:

The targeted area for backfilling is 123 m EW x 35 m NS, about 4.305 square meter. The backfilling will be 2 m high. Soft sand soil will be the main material for backfilling and it will be

covered with lime gravels soil, which usually used for protection from rain water, because it prevent water penetration.

	Description	Amount in USD
1	718 loads of sand	56.000
2	119 loads of lime gravels	8.800
3	Tools and materials (wheelbarrows, plastic sheets)	2.600
4	30 local workmen x 10 USD x 30 Days	9.000
5	3 Archaeologists x 50 USD x 30 Days	4.500
6	Fuel and car service	2.000
7	2 Conservators x 50 USD x 30 Days	3.000
	Total	85.900 USD

2. Budget for urgent cleaning work at Meroe Royal City:

The newly grown vegetation at the site is considered direct threats to the monuments, therefore conducting rescue campaign aiming to cut properly all trees over and around temples and palace is highly recommended urgently.

	Description	Amount in USD
1	Transportation: Rent of one car (4 x 4) x 30 Days Tractor + truck (Provided by Island of Meroe World Heritage Site)	2.100
2	Archaeologist's for supervision: 2 × 50 USD × 30 days	3.000
3	Local workmen: 20 × 10USD × 30 days	6,000
4	Fuel for cars and generators at the camp and the wells for water supply	1.500
5	Accommodation	700
	Total	13.300 USD

3. Budget for conducting urgent security measures at Meroe Royal City:

As mentioned above, the Royal City of Meroe needs urgent work which I consider a rescue work. More protection to the site is urgently needed. The proposed work will incorporate both research work and fieldwork. There is a need to conduct survey and mapping different monument and its state of preservation, recording scattered loose blocks with inscriptions, surface cleaning, fencing, and develop new site entrance and select areas for a better presentation of the site.

	Description	Amount in USD
1	Transportation: Rent of one car (4 x 4) x 90 Days Tractor + water Tanker + truck (Provided by Island of Meroe World Heritage Site)	6,300
2	Building materials: Bricks, cement, lime, sand, and other restoration materials	5000
3	Archaeologist's for supervision: 2 × 50 USD ×90 days	9,000
4	Topographer × 50 USD× 30 days	1,500
5	Local workmen: 20 × 10USD × 60 days	12,000
6	Skilled masons (NCAM Technicians): 2 × 30 USD x 60 days	3,600
7	Stationary and Preparation of final report	2,000
8	Fuel for cars and generators at the camp and the wells for water supply	4.500
9	Accommodation	2.000
	Total	45.900 USD

4. Budget for implementing of workshops and events for creating awareness among the local community:

	Description	Amount
1	3 Local experts for lectures at schools, villages, and at Meroe visitor Centre	1000 USD
2	Education materials	750 USD
3	Local coordinators	1500 USD

4	Preparation of Meroe Visitor Centre	250 USD
5	Food and drinks for participants	1000 USD
6	Coordination and supervision	1500 USD
7	Stationary and promotion	1500 USD
	Total	7,500 USD

Budget for urgent rescue work at Augustus Temple (M 292):

A preliminary campaign aimed to trace the damages and propose urgent solutions and develop long term conservation project is highly recommended.

	Description	Amount
1	Transportation: Rent of one car (4 x 4) x 15 Days	1.050
2	Expert structural engineer × 100 USD × 15 days	1.500
3	Expert archaeologist × 100 USD × 15 days	1.500
4	Topographer × 50 USD × 15 days	750
5	Stationary and Preparation of final report	1,000
6	Fuel for cars and generators at the camp for water supply	1.000
7	Food and accommodation	2.000
	Total	8.800 USD

Recent Work at the Royal City

A workshop organized by the Regional Antiquities Office, River Nile State, at Meroe on Monday, August 26, 2024. This workshop on (Evaluation of Risk and Direct and in Direct Impact of War on the Archaeological Sites at Meroe and the Development of a common vision Among Institutions and Local Communities in the Region for Site Protection and Preservation), aimed to bring together all partners in the field of archaeology, tourism, and the local community in the River Nile State to work side by side in order to protect and preserve this valuable heritage at Meroe and in the region in general. The workshop was funded by *Urgent Safeguarding Measures*

for Sudanese Cultural Heritage project funded by UNESCO's Heritage Emergency Fund, which was allocated exclusively for a community workshop at Meroe.

The participants at this workshop represents:

- 1- Archaeology and Heritage Studies Centre – Nile Valley University.
- 2- Department of Archaeology – Shendi University.
- 3- Tourism Department River Nile State.
- 4- Tourism Department Khartoum State.
- 5- Representative of local communities from the villages around Meroe.
- 6- Tourism Police – River Nile State.
- 7- Young graduated students' volunteers at the regional antiquities office.

Total number of participants in the workshop are 26 participant include professors, graduated students, government employee, the guards of the sites at Meroe, and representatives of the local communities from Begarawiyah and Daragab villages. The workshop consider gender issue and quite number of female almost 40% are participated.

The Workshop:

The workshop program focused on presenting to the participants in details the impact of current war on the archaeological heritage, and the identified risk and damage to the archaeological sites at Meroe and the whole region. The presentation concentrated on the sites of the Island of Meroe World Heritage site; Meroe Pyramids, Meroe Royal City, Naga, and Musawwarat el-Sufra, with more emphasis on the Meroe Royal City.

On the Royal City of Meroe part, we mentioned clearly that the site is situated at the end of the list among the Island of Meroe World Heritage Sites when it comes to conservation condition. This situation is not new, but it has a long time even since the time of the inscription of the property. At the royal city of Meroe, the Amun Temple in particular is in a very poor state and requires immediate attention in terms of consolidation, presentation and visitor management.

Human impact to the site is similar to the pyramids because the site is also nowadays a destination for uncontrolled visitors from surrounding villages that have been overpopulated after the war by

displacement from Khartoum state and yet there is completely no interpretation or presentation of the heritage and how to go around it.

Natural elements such as rain have also impacted the site conservation condition at Meroe Royal City. The last rain season was considered the heaviest during decades. The result of rain could be seen in the growing of trees all over the site and its monuments. Temples and palaces walls are now covered with trees, which considered clear threats to the monuments.

The Royal City Initiative (Nafir Al-Madina Al-Malakeya) come as a response to one of the workshop recommendation which is proposed cleaning the wild vegetation at the Royal City, because this kind of trees are uncontrollable and dangerous. The invitation to participate in this initiative extends to all segments of the local community, with a particular focus on youth and athletes. The accompanying program includes a sports festival at the Royal City Field in Begarawiyah. It also features a discussion session to evaluate the experience of the initiative.

This activity coincides with the celebration of World Tourism Day, which this year comes under the theme Tourism and Peace.



Meroe Royal City World Heritage Site share the same problem with the pyramids site and the other sites of the Island of Meroe World Heritage sites, that suffering from the absence of Stakeholder's involvement and the complete isolation from supervision of both federal government and the state government.

However, regarding involvement of archaeologist, it is also one of the task should be considered. That the site is divided among three different missions carrying out research with their own various interests, and none of these missions has contributed to the site general conservation. Therefore, all work have been done during the last years and the ongoing protection work at the site is conducted by NCAM and its resident team at Meroe.

Naga Site State of Conservation



Naga site

Naqa is one of the largest and unique archaeological sites in the Sudan and indicates an important ancient city with its standing and well preserved monuments. It was one of the centers of Meroe Kingdom, which served as a bridge between the [Mediterranean](#) world and [Africa](#). The site has two notable temples, one devoted to [Amun](#) and the other to [Apedemak](#) which, also has a [Roman](#) kiosk nearby.

The site monuments are generally, in a good condition and it received a good care from the archaeological mission working at the site. Conservation and restoration work was conducted properly in most of the temples.

The site at Naga is located in an area normally receives heavy rain during summer. So, the rain water has a direct impact on the site and its monuments. Also, flash floods are one of the major threats to the site especially the area of the Lion Temple and the Roman Kiosk. The low area around these temples allow water from the wadi to enter and stuck around these monuments every year. This fact has a direct impact on the preservation of these buildings.



Recent Visit to Naga and Update on Current Situation

We have managed recently to visit Naga on the 3rd December 2024, and the site and its monument are in good condition. In fact, since an armed conflict took place at Naga last January 2024, we started contact with the security committee in the Shendi Locality and the military base at Shendi. But we have received no response to our letters. Later in April we have renewed our letter to the military base in Shendi and they confirmed that the area is not secure.

In the 20th of November 2024 we visited the military base again and handed a letter asking for information about the site at Naga and its condition and the possibility to visit the site to evaluate its state of preservation. The military response this time was overwhelming. They send a team to the site and provide a report to us confirming the good condition of all temples and recommending a second visit together with the Regional Antiquities Office team for proper evaluation of the current condition of the site and to evacuate the archaeological objects from the mission house at Naga, and from their side, they will make all the needed protection for the archaeologists team.

In the 3rd of December 2024, a team from the Regional Antiquities Office accompanied by military armed forces visited Naga. We have informed that we have a limited time to be at the site; therefore, we made a quick tour to the Lion temple and Amon temple and all monuments at the site and we can confirm that there is no clear damage on the walls of the temples or the inscriptions decorating these walls and the site is in a good condition.

Unfortunately the mission house was badly plundered. In fact, the house includes stores for archaeological materials and objects recovered during field work of almost the last twenty years. We have compared what is there now in the store rooms with the lists of stored materials at the house provided by the mission, and we can confirm missing of number of objects. This looting is associated with the presence of RSF at the site in January 2024.



**Visiting Naga
3 December
2024**



Concerning landmines, the area is still a field of landmines, however, it is mainly protecting the mission house from further looting, because the installation of landmines was after RSF appearance at the site. Also landmines are controlling the road from east Butana towards Shendi. During our first inspection visit to Naga in 2023, we have confirmed the potential threat to the site and its monuments. The site is located currently on an active cross road (smuggling road) coming from Butana, Madani and Khartoum to Shendi area. Therefore, controlling this strategic road is a means of protection of Shendi. Here, we would like to express our thanks and appreciation to the military base in Shendi for the cooperation and support that make the visit to Naga possible. Also,

we appreciate their high understanding of the importance of safeguarding our archaeological heritage in these critical circumstances facing our country.



Recent Photo Amun Temple at Naga 3rd December 2024



Recent Photo Lion Temple and Hathor Chapel at Naga 3rd December 2024

This visit to Naga with this high level cooperation with the military, helps in developing a good relation and trust with the military base at Shendi. We have got clear promises to be informed at the time of removing landmines, and also for further coordination and cooperation regarding considering heritage protection as one of the military priorities. Also, they confirmed to play greater role in the management of the Island of Meroe World Heritage site as part of the site stakeholders.

Musawwarat es-Sufra Site

State of Conservation



Musawwarat es-Sufra

Musawwarat es-Sufra is a large Meroitic temples complex dating to the early Meroitic period. The main features at the site include the Great Enclosure, the Lion Temple of Apedemak and the great Reservoir.

Same as Naga the site monuments are generally, in a good condition and it received a good care from the archaeological mission working at the site. Conservation and restoration efforts conducted at the site are overwhelming.



Heavy rains and storms during the 2023 rainy season have caused substantial damage to parts of the archaeological site of Musawwarat es-Sufra and its protective and visitor installations, such as fences. Further risk could be seen in the walls of the Great Enclosure, which are being eroded by rain water entering and washing out their fill. Such measures need to be addressed in the near future.





Same as Naga, the impact of ongoing war in Sudan has put its shade on the site at Musawwarat es-Sufra. A military base has recently been installed on the way to the site using the hospital of Sudan Civilization Institute. So, there is presence of military forces, but the site witness no any armed conflict.

It is also important to mention that, the site is located not far from one of the biggest military training camps, where training on heavy weapons took place. The impact of this weapons has been noticed at the site through the vibration result from these weapons. This issue has been reported earlier to the military head quarter at Shendi.

The site monuments are generally in a good condition. The sand stone as the main material used in all buildings at the site is well preserved.

Concerning the site and its monuments there is no serious potential risk, and the proposed conservation measures if it could be done will help keeping the site in such good shape. However, the potential threat to the site is from any possible impact of the current armed conflict on the site.

There are some measures that need to be addressed in the near future, which are the preservation of the walls of the Great Enclosure, that being eroded by water entering and washing out their fill. This work can be run by the experienced work group of NCAM technicians and local workmen, but logistically more investment is needed (provision of water, lime, etc.). This work would need to be prepared well in advance and require a degree of supervision from NCAM staff.

The director of the mission working at the site Cornelia Kleinitz (Project director Humboldt-University), provide a proposed plan of maintenance work at the site in May 2024. This proposal is including:

Measures at the Great Enclosure (ranked according to priority):

- Cleaning of the area around the site museum, especially the drainage system.
- Maintenance of drainage at the Central Terrace of the Great Enclosure (area of elephant wall end).
- Sand removal along the fence to protect the mesh from corrosion.
- Filling with sand of washed out gullies and wall sections in the area of the Great Enclosure, especially in its southern and eastern parts.
- Removal of sand accumulations from enclosure walls.
- Repair/renewal of the cracked covers of some of the protective mastabas.

Measures at the Lion/Apedemak Temple (ranked according to priority):

- Removal of sand accumulations from outside walls of the Lion Temple.
- Sand removal along the fence to protect the mesh from corrosion.
- Filling of gullies and washed out sections of the fence, especially where the cement bases of the metal poles have been washed out and/or the distance between mesh and ground now allows animals to enter the enclosure.

It is unfortunate to say that all kind of conservation and urgent maintenance work at the site, cannot be done under current circumstances. Only small measures that can be done by the site guards such as cleaning and sand removal are already completed.